# BEFORE THE FEDERAL COMMUNICATIONS COMMISSION WASHINGTON, D.C. 20554

In the Matter of	)	
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Revision of the Commission's Rules	)	CC Docket No. 94-102
To Ensure Compatibility with Enhanced 911	)	
Emergency Calling Systems	)	
	)	
	)	

# ACS WIRELESS PETITION FOR LIMITED WAIVER AND FORBEARANCE

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#### **SUMMARY**

ACS Wireless, Inc. ("ACSW") requests a limited waiver of the wireless Enhanced 911 ("E911") Phase II compliance rules established by the Federal Communications Commission ("FCC" or the "Commission") for Tier III carriers, as well as temporary forbearance from E911 accuracy and reliability standards for locating subscribers. ACSW is a rural Tier III carrier that currently serves the state of Alaska through a TDMA and AMPS network and is subject to the Commission's 2002 Non-Nationwide Carriers Order modifying the E911 Phase II compliance schedule for certain Tier III carriers. ACSW has made substantial progress in building a CDMAbased network that will enable it to meet the Commission's E911 location requirements using A-GPS handsets, and continues to work diligently towards deploying the network as soon as possible. Despite its best efforts, however, ACSW has encountered technical and economic obstacles, largely due to the unique characteristics of the state of Alaska. Accordingly, ACSW seeks a limited waiver of the Phase II deadlines and proposes a compliance plan that does not differ substantially from the Commission's current requirements. In addition, ACSW seeks forbearance from the Commission's accuracy and reliability requirements for a limited period, up to and including December 31, 2005.

#### **DISCUSSION**

#### I. BACKGROUND

ACSW is a Tier III carrier that provides telecommunications services throughout the state of Alaska. On November 30, 2001, ACSW filed a Petition for Limited Waiver of the E911 Phase II Location Technology Implementation Rules<sup>1</sup> established by the Commission and set forth in 47 C.F.R. § 20.18(e)-(h) ("Phase II rules"). In its Original Petition, ACSW described the unique

<sup>&</sup>lt;sup>1</sup> See ACS Wireless Petition for Limited Waiver, CC Docket 94-102, filed November 31, 2001 ("Original Petition"). Shortly thereafter, on December 5, 2001, ACSW filed a redacted version of its Original Petition for public inspection.

challenges it faces as a small carrier providing wireless service throughout Alaska. ACSW sought a limited waiver from the Commission's Phase II compliance schedule and proposed an alternative compliance plan that it believed was more realistic at the time.

On July 26, 2002, the Commission issued its *Non-Nationwide Carriers Order*, temporarily staying the application of various Phase II deadlines for certain Tier II and Tier III wireless carriers.<sup>2</sup> In particular, the Commission delayed interim handset and network upgrade compliance deadlines for certain Tier III carriers by thirteen months from the date of the *Non-Nationwide Carriers Order* and set forth a revised compliance timetable for implementation of Phase II. ACSW, by virtue of its Original Petition, is subject to the *Non-Nationwide Carriers Order*.<sup>3</sup>

On October 10, 2003, the Commission issued an *Order To Stay*, in which it temporarily stayed application of certain Phase I and Phase II deadlines for various groups of petitioners and described the circumstances under which it would grant relief from the existing standards.<sup>4</sup> With respect to petitioners that sought deployment deadlines that were the same as those in the *Non-Nationwide Carriers Order*, the Commission granted the petitions. For those that sought greater extensions than in the *Non-Nationwide Carriers Order*, the Commission stayed application of requirements until the Commission ruled on the petitions, or until six months from the release of its *2003 Order To Stay*, whichever is sooner. Finally, with respect to a petition filed by a coalition of carriers that sought forbearance from accuracy and reliability standards ("Coalition Petition"), the

<sup>&</sup>lt;sup>2</sup> See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Phase II Compliance Deadlines for Non-Nationwide Carriers, CC Docket No. 94-102, Order To Stay, 17 FCC Rcd 14841 (2002) ("Non-Nationwide Carriers Order").

<sup>&</sup>lt;sup>3</sup> *Id.* at Appendix A.

<sup>&</sup>lt;sup>4</sup> See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, E911 Compliance Deadlines for Non-Nationwide Tier III CMRS Carriers, Order To Stay, CC Docket No. 94-102, FCC 03-241, released October 10, 2003 ("2003 Order To Stay").

Commission stayed application of the standards until the Commission rules upon the Coalition Petition, or six months, whichever is sooner.<sup>5</sup>

In its 2003 Order To Stay, the Commission explained that it would grant relief only under extraordinary circumstances and provided guidance as to the type of showing a carrier must make in order to demonstrate that good cause exists to grant the relief being sought. The Commission reminded petitioners that requests for relief should be "specific, focused, and limited in scope, with a clear path to full compliance." Specifically, with respect to waivers for carriers transitioning from one interface to another, the Commission explained that the carrier must show "a clear path to full compliance' by, for example, providing concrete evidence of its genuine commitment to a date certain for that transition to be accomplished." With respect to claims of technical infeasibility of accuracy standards, the Commission stated that good cause for granting the waiver exists if a carrier provides "concrete, specific plans to address the accuracy standards and ha[s] presented [its] testing data and other evidence to demonstrate [its] inability to meet the accuracy requirements."

The Commission further explained that supporting evidence showing that the carrier is working with affected PSAPs in its service area in order to meet community expectations would serve as a demonstration of the carrier's good faith in requesting relief. This Petition sets forth information and supporting evidence, as described by the Commission, that demonstrates justification for the limited waiver and forbearance that ACSW seeks.

<sup>&</sup>lt;sup>5</sup> A Coalition of Tier III rural wireless carriers (the "Coalition" or "Tier III Coalition") filed a petition on November 20, 2002 in which it sought forbearance from the Commission's accuracy and reliability standards contained in 47 C.F.R. § 20.18(h). Although ACSW filed comments in support of the Coalition Petition, it was not made a party to the Coalition Petition. Thus, ACSW files this separate petition seeking essentially the same relief.

<sup>&</sup>lt;sup>6</sup> 2003 Order To Stay at ¶ 22 (quoting from Revision of the Commission's Rules to Ensure Compatibility With Enhanced 911 Emergency Calling Systems, Fourth Memorandum Opinion and Order, CC Docket No. 94-102, 15 FCC Rcd. 17442 (2002) ("Fourth Memorandum Opinion and Order")).

<sup>&</sup>lt;sup>7</sup> *Id.* at ¶ 27.

 $<sup>^{8}</sup>$  *Id.* at ¶ 26.

<sup>&</sup>lt;sup>9</sup> *Id.* at ¶ 28.

In the two years that have passed since ACSW filed its Original Petition, ACSW has diligently worked to build and deploy a CDMA network that will enable it to meet the Commission's E911 standards. ACSW recognizes the public safety importance of the E911 standards and is fully committed to becoming compliant with them. To that end, ACSW continues to expend substantial resources, including significant amounts of money, in trying to build its network as expeditiously as possible. Indeed, ACSW believes that it can meet some of the compliance benchmarks *sooner* than it anticipated in its Original Petition.

Nevertheless, because of the many unique challenges that ACSW has had to face by virtue of being a small carrier attempting to build an expansive network throughout rural Alaska, ACSW must now seek the relief described in this petition. Specifically, ACSW seeks a limited waiver of the compliance requirements set forth at 47 C.F.R. § 20.18(g) and modified by the *Non-Nationwide Carriers Order*. In addition, ACSW seeks forbearance for a limited time, until December 31, 2005, from the § 20.18(h) accuracy and reliability standards imposed by the Commission. ACSW does not have any pending compliance requests from PSAPs for Phase II E911 requirements.

#### II. UNIQUE CHALLENGES FACED BY ACSW

# **ACSW's Network**

ACSW currently provides wireless service over a TDMA and AMPS network. The ACSW network spans an enormous area throughout Alaska, encompassing coastal areas, mountain ranges, rainforest, glaciers, and tundra, all with different climates, geography, and demographics. Alaska is very sparsely settled, with small villages and communities that are often spread many hundreds of miles apart and, in many cases, are inaccessible by road. The area covered by ACSW's network includes very remote and rural locations, including areas that experience extreme weather conditions for much of the year. For example, Fairbanks, which is one of the three largest Alaska

markets, includes areas above the Arctic Circle and vast stretches of frozen tundra, mountain ranges, and roadless expanses. Winter in this area begins in late August and lasts until late May.<sup>10</sup>

ACSW's TDMA network consists of 103 active cell sites, *of which only 63 can hand off to two or more cell sites*. Therefore, only 63 cell sites are situated appropriately for most, if not all, network-based location technologies to work properly.<sup>11</sup> *The remaining 40 sites, almost 40% of ACSW's network*, are extremely problematic for network-based location technologies. Some of these 40 cell sites are on highways and, while a handset is able to see two other cell sites when using these, it can only see them in a straight line. So, because they cannot triangulate, a subscriber's handset sees, in effect, only one cell site. For other cell sites in this group, a subscriber's handset can see only a single other cell site.<sup>12</sup> Lastly, another group of the 40 cell sites are stand-alone sites and cannot hand off to any other cell sites.<sup>13</sup>

To further complicate matters, ACSW owns less than one-half of its cell towers. ACSW leases most of its towers from another telecommunications carrier. Due to the expense of constructing and maintaining towers in remote areas of Alaska, a single tower is often used to support long-distance, microwave, and cellular services. Consequently, a substantial number of these towers are already overloaded. To date, ACSW has had to wait lengthy periods to get access to certain towers to install additional antennae and other equipment. Therefore, ACSW has no right to install additional equipment on a large number of its cell towers and, even if it did, its ability to access towers in a timely or cost effective manner is diminished.

<sup>&</sup>lt;sup>10</sup> For reference, we have attached maps showing ACSW's cell site locations in Anchorage, Fairbanks, and Juneau – Alaska's three largest markets. *See* Attachment A.

<sup>&</sup>lt;sup>11</sup> Most of ACSW's mobile traffic is in these sites.

<sup>&</sup>lt;sup>12</sup> Of these cell sites, some are used for fixed dial tone.

<sup>&</sup>lt;sup>13</sup> These sites include, but are not limited to, Bedami, Barrow, Seward, Ratz Mountain, Tern Lake, Whittier, Moose Pass, Nenana, Healy, and McKinley. Some of the stand-alone sites are used for fixed wireless to provide basic dial tone to rural customers. In these instances, local PSAPs are aware of the mobile unit's address because the unit is not truly mobile.

Given the limitations of its TDMA network, including with respect to E911 considerations as discussed below, ACSW determined that its best course of action was to build and deploy a CDMA-based network in its licensed frequencies in order to provide Alaskan consumers improved advanced wireless services, particularly mobile data services. ACSW has made substantial progress in this regard and expects to be able to deploy its CDMA network in the major population areas of the state in 2004. ACSW is committed to migrating its existing TDMA customers to this advanced system as quickly as possible.<sup>14</sup>

# **Lack of TDMA Solutions**

As described in detail in its Original Petition, ACSW's current options for an accurate network-based location technology are limited by the fact that it operates a largely TDMA-based network in a rural area. It is widely accepted that, for TDMA networks, the most accurate available network-based location solutions are Time Difference of Arrival ("TDOA"), Angle of Arrival ("AOA"), Mobile-Assisted Network Locations System using a mobile-assisted hand off technique (generally referred to as "MNLS"), and other similar solutions, which rely on triangulation and/or interpretation of signal strength measurements. However, industry tests have revealed that none of these network solutions can strictly meet the Commission's accuracy and reliability requirements, particularly for TDMA networks. ACSW's own analysis supports this conclusion.

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<sup>&</sup>lt;sup>14</sup> In some areas, ACSW may, depending on future determinations of cost, need, or feasibility, retain some TDMA and/or analog service for its subscribers. ACSW will maintain analog service to the extent required by the Commission's rules and its subscribers needs.

<sup>&</sup>lt;sup>15</sup> TDOA, AOA, and Sensors all rely on triangulation in order to determine the location of a mobile unit. MNLS uses an existing mechanism of the handset combined with a technique known as mobile-assisted handoff (MAHO) to make and transmit measurements that are compared against a database of signal measurements to determine the location of a mobile unit.

<sup>&</sup>lt;sup>16</sup> See Cingular Wireless LLC Petition for Limited Waiver of Sections 20.18(e)-(h), CC Docket 94-102, dated July 6, 2001 at 23, 32-33 ("Cingular Waiver Petition") (discusses the analyses and findings of various industry representatives including VoiceStream, AT&T, Motorola, Ericsson and Nokia).

Moreover, because of the unique characteristics of ACSW's network, no *single* location solution will provide location accuracy levels that comply with the Commission's mandate. To meet the Commission's accuracy and reliability standards, ACSW would have to deploy combinations of technologies across its network in ways that are unproven and have unknown reliability. For example, ACSW would have to construct a parallel sub-network for all sites that can see only one other site, designed solely to allow these location solutions to function as designed. Deploying even one of these technologies, let alone several, in Alaska is prohibitively expensive for ACSW and its small customer base.<sup>17</sup> Ultimately, it does not make sense to invest such large sums of money to create extraordinary solutions when it is not even clear that such solutions would reliably achieve Phase II accuracy levels.

None of the foregoing network-based location solutions offer a viable means of meeting the Commission's standards. ACSW was faced with having no alternatives that were technically or economically feasible (particularly given ACSW's small subscriber base), or even commercially available, for its TDMA network. <sup>18</sup> For these and other reasons, ACSW chose to deploy a handset-based solution on a CDMA network.

#### III. PROGRESS IN CDMA DEPLOYMENT

In view of the numerous obstacles imposed by the TDMA network, ACSW set forth a plan, as described in its Original Petition, to build and deploy a CDMA-based network using Assisted

<sup>&</sup>lt;sup>17</sup> Costs for constructing, modifying, and/or maintaining equipment in the extreme conditions that exist in many areas of Alaska can be daunting. Extreme ice and wind, huge temperature fluctuations, and varying levels of rain and snowfall all contribute to the engineering and economic challenges. In addition, accessibility is also an issue, as the remoteness of some of the existing towers require helicopters for any modification.

<sup>&</sup>lt;sup>18</sup> In its Original Petition, in describing how it arrived at the decision to pursue the CDMA alternative, ACSW explained the technical challenges and shortcomings of each of these solutions, as well as the economics involved, in much greater detail. ACSW refers the Commission to its Original Petition rather than repeating the discussion here.

Global Positioning Satellite ("A-GPS") handsets to comply with the Commission's standards.<sup>19</sup> ACSW remains confident that this technology is the best available solution, and has worked diligently to build its CDMA network and deploy it as expeditiously as possible. Nevertheless, despite its best efforts, the build-out and deployment has taken longer than anticipated and ACSW believes compliance with the Commission's standards will take slightly longer than the timetable set forth in the *Non-Nationwide Carriers Order*.<sup>20</sup>

#### Standard for Waiver

The Commission has recognized that in certain situations, such as when technology-related issues or other exceptional circumstances arise, the Commission may waive its rules.<sup>21</sup> Generally, the Commission's rules may be waived for good cause shown.<sup>22</sup> Further, waiver is appropriate if special circumstances warrant a deviation from the rules, and such a deviation will serve the public interest.<sup>23</sup> Special circumstances include unusual factual circumstances that make application of the rule(s) inequitable or unduly burdensome, or when an applicant for waiver has no reasonable alternative to enable compliance with the rule(s).<sup>24</sup>

In its 2003 Order To Stay, the Commission provided guidelines for demonstrating that extraordinary circumstances prevent immediate compliance with the rules and that good cause exists for the grant of relief. The Commission explained that petitioners must show that the relief sought is as narrowly tailored as possible, that the petitioner is taking all possible concrete steps to achieve compliance as soon as possible, and that the relief sought is not contrary to the public

<sup>&</sup>lt;sup>19</sup> As a further demonstration of the lack of potential solutions in TDMA, handset vendors have not made commercially available any A-GPS handsets that are compatible with TDMA networks – a fact that does not appear likely to change in the future. *See* Cingular Waiver Petition at 33 (citing Nokia, Motorola, and Panasonic).

<sup>&</sup>lt;sup>20</sup> Although ACSW is striving to accomplish some of the milestones ahead of the schedule set forth in its Original Petition, it appears that the projected date for initial deployment of the network may have been too aggressive.

<sup>&</sup>lt;sup>21</sup> See Fourth Memorandum Opinion and Order at ¶ 43.

<sup>&</sup>lt;sup>22</sup> *Id.*; see also 47 C.F.R. § 1.3.

 $<sup>^{23}</sup>$  Id

<sup>&</sup>lt;sup>24</sup> See 47 C.F.R. § 1.925(b)(3)(ii).

interest.<sup>25</sup> For carriers transitioning from one type of interface to another, as is the case for ACSW, the Commission explained that the carrier must show "a clear path to full compliance' by, for example, providing concrete evidence of its genuine commitment to a date certain for that transition to be accomplished."<sup>26</sup>

As described in detail below, ACSW has made substantial progress in building its CDMA network and continues to work diligently towards deployment in conjunction with a specific plan and dates certain. The additional time being sought is necessary, however, given the unique challenges of building such an expansive network in the state of Alaska. Nevertheless, ACSW's proposed compliance plan is not significantly different from the existing deadlines and compliance with the Commission's rules will not be substantially delayed. Thus, ACSW has made substantial progress towards complying with the Commission's rules, the relief it seeks is as narrowly tailored as possible, and the relief would not be contrary to the public interest.

### **Progress To Date**

As mentioned, ACSW has invested heavily in transitioning to a CDMA-based network. ACSW continues to dedicate substantial amounts of money and resources to building the network and is unquestionably committed to deploying it as soon as possible. Among other things, ACSW has accomplished the following:

- Made significant progress in construction of the 32 sites that will comprise the first phase of the CDMA network; construction has commenced on all of the sites and the sites are either all or partially constructed at this time;<sup>27</sup>
- Spent almost \$18 million on building the CDMA network thus far; expect to spend as much as an additional \$23 million in 2004;<sup>28</sup>

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<sup>&</sup>lt;sup>25</sup> See 2003 Order To Stay at  $\P$  2.

 $<sup>^{26}</sup>$  *Id.* at ¶ 27.

<sup>&</sup>lt;sup>27</sup> Of the 32 sites, 20 are collocated, and 12 are new; progress in construction varies site by site.

<sup>&</sup>lt;sup>28</sup> ACSW spent approximately \$4.5 million in 2002, and will have spent approximately \$13.1 million by the end of 2003; although not yet finalized, ACSW is budgeting \$23 million for 2004.

- Installed major equipment in Anchorage, including a CDMA-based switch, as well as a Home Location Register ("HLR") that operates to verify customer information and assist in managing TDMA and CDMA systems;
- Migrated a substantial number of its customers to its HLR, with migration expected to be complete by early December 2003;
- Completed negotiations with a hardware vendor on construction of the network; contracted with vendor for full completion of project;
- Resolved virtually all outstanding permitting and other local regulatory issues, including all necessary applications, as well as private negotiations of leases;
- Implemented a new billing and SMS system, as well as other back-office functionalities to handle transfer to CDMA network; and
- Conducted substantial training of ACSW technicians and engineers for transition to CDMA network.

### **Path To Compliance**

ACSW has made real and substantial progress towards deployment of its CDMA network. In addition to the progress already made, and described above, ACSW also expects actual deployment of the network in accordance with a three-phase plan, as described below:

- Phase I: Expected completion date of December 31, 2003; coverage of Anchorage and Matanuska Valley; this area will cover over 50% of Alaska's population and over 50% of ACSW's subscriber base;
- Phase II: Expected completion date of December 31, 2004; coverage of all other major population centers, including Fairbanks, Juneau, and the Kenai Peninsula; will cover over 75% of Alaska's population and over 85% of ACSW's subscriber base; and
- Phase III: Expected completion date of December 31, 2005; complete the remaining coverage areas, including more remote locations and smaller-populated communities.<sup>29</sup>

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<sup>&</sup>lt;sup>29</sup> Locations included in this phase of construction include low population cities such as Klawock (pop. 854), Wrangell (2,308), Petersburg (3,224), Manley (72), Glennallen (554), and Tok (1,393). In addition, it includes areas that are difficult to access, such as Cape Spencer Lighthouse in the Glacier Bay National Park and Preserve, and the Funter Bay State Marine Park (only accessible by water or air). Despite the physical and technical challenges, ACSW believes that public safety considerations make it important to extend coverage to even the most remote areas to the extent economically feasible.

### **Proposed Plan**

As the foregoing demonstrates, ACSW remains committed to building and deploying its CDMA network as quickly as it can. ACSW firmly believes that the system will not only prove to be more beneficial to consumers in many respects, but will also be economically more advantageous for ACSW.<sup>30</sup> Therefore, ACSW is anxious to deploy its network as soon as possible. Having made substantial progress in building the CDMA network, and having actually dealt with many anticipated and unanticipated obstacles to constructing such a vast network, ACSW believes that it is now in a better position to propose a more realistic plan for meeting the Commission's standards. Accordingly, ACSW proposes that it:

- Begin selling and activating location-capable handsets no later than **January 31, 2004**;
- Ensure that at least 50% of all new handsets activated are location-capable no later than **May 30, 2004**;
- Ensure that at least 90% of all new handsets activated are location-capable no later than **May 30, 2005**;
- Ensure that at least 99% of all new digital handsets activated are location-capable no later than **December 31, 2005**;<sup>31</sup> and
- Ensure that penetration of location-capable handsets among its subscribers reaches 95% no later than **June 30, 2006**.

This proposed compliance plan includes dates that are only slightly later than those provided by the Commission in its *Non-Nationwide Carriers Order*. However, because Alaska's location,

<sup>&</sup>lt;sup>30</sup> In addition to the advantages that CDMA offers with regard to E911 location requirements, the CDMA network will also allow ACSW to offer consumers other advanced services such as high-speed wireless internet access.

<sup>&</sup>lt;sup>31</sup> As explained previously, ACSW has made great efforts to extend its network to even the most remote areas of Alaska. Although ACSW believes that wireless coverage in these areas is an important public safety consideration, it is not economically feasible to deploy CDMA technology in all of them. Accordingly, some coverage areas may remain TDMA-based, and some may even be analog. Thus, a very few digital handsets may operate primarily on analog or TDMA systems, and it may be extremely difficult to reach a 100% standard in the near future. For example, ACSW provides analog service to Barrow, Alaska, a native community, located on the Arctic Ocean. It is not economically feasible to provide digital service to this extremely remote site without technological innovations.

geography, climate, and other unique qualities impose substantial hurdles to small carriers, the waivers are necessary.

# IV. PSAP REQUESTS

In its Original Petition, ACSW described its efforts to involve the Alaska PSAPs in discussions that ultimately led to its decision to transition to a CDMA network. At the time, the major PSAPs provided letters reflecting their positions on ACSW's plan and each PSAP was supportive of ACSW's efforts. ACSW continues to work in close contact with the PSAPs, and maintains ongoing communication with the Anchorage PSAP in particular (the APCO Project 38 Model City). The Anchorage PSAP recently informed ACSW that it will rescind its earlier request for Phase II E911 data, primarily because it is not yet technically prepared to receive such information.<sup>32</sup> Accordingly, there are no current pending PSAP requests for Phase II compliance. Based upon meetings and discussions, it is anticipated that other PSAPs will wait until Anchorage is up and running, then seek to connect to the Anchorage system over time.

#### V. ACCURACY AND RELIABILITY STANDARDS

In the Coalition Petition, the Tier III Coalition described the unique difficulties associated with deploying an accurate Phase II location solution in a rural environment. While many of the points made by the Coalition are generally applicable to all rural areas, they hold especially true for the state of Alaska. Therefore, due to inherent limitations of existing technology, strict adherence to the Commission's standards would not only be unduly burdensome, but may even prove to be technically impossible. ACSW asks that the Commission forbear from enforcing its accuracy and reliability standards until December 31, 2005, during which time ACSW can conduct tests and

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<sup>&</sup>lt;sup>32</sup> Anchorage PSAP officials have verbally indicated to ACSW that they plan on establishing a new, more realistic time frame for a request for Phase II compliance.

gather data on the use of A-GPS handsets in its networks and determine what levels of accuracy and reliability are technically achievable.

# **Standard For Forbearance**

The Communications Act of 1936 ("the Act") sets forth standards for granting forbearances. Section 10(a) of the Act provides that the Commission must forbear from applying any regulation or provision if:

- (1) enforcement of such regulation or provision is not necessary to ensure that the charges, practices, classifications, or regulations by, for, or in connection with that telecommunications carrier or telecommunications service are just and reasonable and are not unjustly or unreasonably discriminatory;
- (2) enforcement of such regulation or provision is not necessary for the protection of consumers; and
- (3) forbearance from applying such provision or regulation is consistent with the public interest.<sup>33</sup>

Furthermore, under section 10(c) of the Act, a forbearance request will be deemed granted if the Commission does not actually deny it within one year of filing with the Commission.<sup>34</sup> Thus, a lack of ruling within one year defaults into a grant of the forbearance.<sup>35</sup>

As explained in the Coalition Petition, and detailed below with regard to ACSW, all three elements for granting forbearance are met: 1) requiring strict adherence is not necessary to ensure that rates are just, reasonable, and non-discriminatory, especially in light of the unique technical and economic challenges that ACSW faces; 2) it would not further protection of consumers because the unique characteristics of Alaska are such that strict accuracy would not add to the public safety; and 3) forbearance from enforcement for a limited time period would serve the public interest in that ACSW could continue to provide wireless services to its subscribers.

<sup>&</sup>lt;sup>33</sup> 47 U.S.C. § 160(a).

<sup>&</sup>lt;sup>34</sup> See Id. § 160(c).

<sup>&</sup>lt;sup>35</sup> The Commission can extend the one year period by up to 90 days. *Id.* 

### Technical Challenges In Rural Areas and Alaska In Particular

Strict enforcement of standards that may be technically impossible and economically infeasible to meet is not necessary to ensure just, reasonable, and non-discriminatory rates. Indeed, strict enforcement may have the undesired consequence of causing rates to increase substantially. There are significant technical differences between rural and urban markets. In many locations, rural networks are not configured in a matrix-style pattern like their urban counterparts. Accordingly, network triangulation at those locations is extremely difficult, if not impossible. Like the Coalition members, ACSW has numerous cell towers that are deployed linearly along the few rural highways in Alaska. ACSW also has a number of remote stand-alone cell sites. While this configuration enables ACSW to provide service to many of the most rural and remote areas of Alaska, it does not permit network signal triangulation, requiring ACSW to utilize a handset location solution.

Even for an A-GPS system, one of the most accurate location technologies available,<sup>36</sup> coupled with a CDMA network, reliable location accuracy is far more technically challenging for ACSW's service area than for most areas. Currently, there are certain satellites that circle the earth for GPS purposes. These satellites work in conjunction with ground stations on earth to achieve location accuracy. However, due to Alaska's sparse population and Northern Hemisphere location, there are fewer ground stations available. In addition, weather conditions and high cloud cover also contribute to less accurate and reliable triangulation across ACSW's geographically vast service area. Many parts of Alaska are prone to periodic heavy winter storms and include areas covered by very dense forests, steep mountain ranges, fjords, glaciers, often in some combination.

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<sup>&</sup>lt;sup>36</sup> See SnapTrak White Paper, Location technologies for GSM, GPRS, and UMTS Networks, at 13-14 ("SnapTrack White Paper").

Even alone, each of these elements creates additional interference for satellite signals, compromising the accuracy and reliability achievable by A-GPS.<sup>37</sup>

Furthermore, because of the unique geography and extreme climate of Alaska, most people spend significant percentages of their time in buildings or in vehicles. This further contributes to accuracy issues, since in-building and in-vehicle attenuation severely impedes GPS signals and accurate positional determination.<sup>38</sup> To be located by A-GPS technology, a person must be in *line-of-sight* contact with at least three to four satellite signals. These signals can be interrupted or blocked completely by buildings, vehicles, mountains, and certain atmospheric conditions. When such conditions render satellite contact insufficient to provide accurate location information, the carrier must fall back on network-assisted location solutions, which in the case of ACSW and many other rural Alaskan wireless carriers, will also prove to be ineffective.<sup>39</sup>

Finally, ACSW faces unique economic and supply challenges that carriers in larger markets do not face. As explained by the Coalition, location solutions are not likely to be manufactured solely for rural carriers because of their lack of market power. As a result, rural carriers are forced to try to successfully implement solutions that do not conform to the specific parameters of their networks and are prohibitively expensive.<sup>40</sup> This obstacle is significant and compromises the availability of equipment that can provide the service in accordance with the accuracy and reliability standards set by the Commission. As ACSW has explained above, the lack of

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<sup>&</sup>lt;sup>37</sup> It is ACSW's understanding that even in the most remote parts of the earth, a minimum of five GPS satellites are visible, which provides accuracy up to approximately 30 meters. Ground stations on earth can improve the accuracy to approximately 9 meters. However, the fewer number of ground stations in Alaska makes this increased accuracy available only 50-60% of the time.

<sup>&</sup>lt;sup>38</sup> See Coalition Petition, Appendix D, Declaration of James C. Egyud, at 3; See also SnapTrack White Paper at 14.
<sup>39</sup> See Rural Telecommunications Group Petition for Waiver and Request for Temporary Limited Stay of Section 20.18 of the Commission's Rules at p. 7, fn. 13.

<sup>&</sup>lt;sup>40</sup> Tier III rural carriers, almost by definition, are more sensitive to issues of economic feasibility since their small subscriber bases make recovery of substantial capital outlays difficult, if not impossible. *See* Coalition Petition.

commercially available alternatives played a significant role in its decision to implement a CDMAbased network.

# **Strict Enforcement Is Not Necessary For Protection Of Consumers**

ACSW is fully aware of public safety considerations in maintaining the various standards for E911 services and takes them very seriously. However, the same stringent accuracy standards used for densely populated urban areas may not be necessary for rural, sparsely populated, and sparingly developed areas in order to achieve the same ultimate public safety goals.<sup>41</sup>

In Alaska, in many instances, public safety can be readily achieved through provision of either Phase I information or less accurate Phase II information. For example, between most communities, there is only one travel route, e.g., there is only one highway from Anchorage to Fairbanks. For 911 calls placed from that highway, where cell towers are deployed like pearls on a string, a 911 caller could be located efficiently by providing the PSAP information about the cell site from which the call originated. Similarly, in rural communities where there are no high rise buildings, callers could be successfully located with much less specific Phase II information. Accordingly, in remote rural areas where there are few buildings and few people, location information to the accuracy and reliability standards set forth in § 20.18(h) may not make the 911 caller easier to physically locate, nor would it make the emergency response faster.

#### **Forbearance Is Consistent With The Public Interest**

As stressed by the Coalition, ACSW's intent is not to avoid its public safety obligations or to subvert the Commission's laudable public safety goals. On the contrary, ACSW only seeks to ensure that the applicable rules are rational, reasonable, and account for the special circumstances it faces as a rural Tier III carrier. ACSW seeks to ensure that the accuracy standards applicable to

<sup>&</sup>lt;sup>41</sup> Indeed, strict enforcement of unrealistic standards may prove detrimental in that it could drive up costs exorbitantly, and either make it economically unfeasible for ACSW to continue providing the same level and quality of service, or make service costs too high to be affordable for many subscribers.

it are based upon the reality of providing services in Alaska. Specifically, like the Coalition, ACSW requests that it be permitted to deploy location technology in its CDMA network for a limited period of time before being held to the § 20.18(h) accuracy and reliability standards. During this period, in cooperation with the PSAPs, it will test the accuracy of A-GPS handsets in its network, collect data on the effectiveness of A-GPS in different locations, and determine what accuracy and reliability level is practically achievable throughout Alaska locations. ACSW asks that the Commission forbear from enforcing the standards until December 31, 2005.

Thus, if forbearance is granted, ACSW will still deploy Phase II solutions and equipment; ACSW will still provide Phase II information to PSAPs when requested; and ACSW will continue to strive for the highest level of accuracy and reliability possible, even in the most rural environments. As a result, the public interest will be served since ACSW will be able to continue providing access to wireless services and their inherent public safety benefits to consumers in rural parts of Alaska. ACSW simply will not be held to an accuracy standard that has not been shown to be realistic, workable, or necessary for rural networks for a period of time while A-GPS is deployed and tested in real situations on its networks.

#### VI. SPECIFIC RELIEF SOUGHT

A. ACSW seeks a limited waiver of the requirements set forth at 47 C.F.R. § 20.18(g) and as modified for certain Tier III carriers by the Commission in the *Non-Nationwide Carriers Order*, and proposes the following compliance plan:

- Begin selling and activating location-capable handsets no later than **January 31, 2004**;
- Ensure that at least 50% of all new handsets activated are location-capable no later than May 30, 2004;
- Ensure that at least 90% of all new handsets activated are location-capable no later than **May 30, 2005**;

• Ensure that at least 99% of all new digital handsets activated are location-capable no later than **December 31, 2005**; and

• Ensure that penetration of location-capable handsets among its subscribers reaches 95% no later than **June 30, 2006**.

B. ACSW seeks a forbearance from the accuracy and reliability standards set forth at 47 C.F.R. § 20.18(h) for a limited period, up to and including December 31, 2005.

#### **CONCLUSION**

For the foregoing reasons, ACSW seeks a waiver of the E911 Phase II compliance requirements, and respectfully asks the Commission to forbear from enforcing its accuracy and reliability standards for a limited time. The requested relief is necessary in light of the unique technical and economic hurdles faced by ACSW in servicing rural Alaska. By granting the relief, the Commission will ensure that its regulations are applied fairly and that they are appropriately tailored to address the special considerations of rural networks. At the same time, the Commission will ensure that consumers in Alaska can continue to have access to advanced wireless and E911 services.

Respectfully submitted on this 14<sup>th</sup> day of November, 2003.

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